

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT: HANS RUSCHEWEYH, ET AL.

TITLE: MIXER FOR MIXING AT LEAST TWO FLOWS OF GAS OR  
OTHER NEWTONIAN LIQUIDS

PRELIMINARY AMENDMENT

The Assistant Commissioner of  
Patents and Trademarks  
Washington, DC 20231

Dear Sirs:

Prior to the Examiner acting in the above-referenced application, please preliminary  
amend the abstract and claims as follows:

IN THE SPECIFICATION:

Please insert the following subtitle before the first paragraph on the first page of the  
specification:

--TECHNICAL FIELD--.

Please insert the following subtitle before the second paragraph on the first page of the  
specification:

"Express Mail" mailing label number EL718784988US  
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D.C. 20231.

Jennifer Watson  
(Typed or printed name of person mailing paper or fee)

[Signature]  
(Signature of person mailing paper or fee)

- -BACKGROUND OF THE INVENTION- -.

Please insert the following subtitle before the first paragraph on the second page of the specification:

- -SUMMARY OF THE INVENTION- -.

Please insert the following subtitle before the fifth paragraph on the third page of the specification:

-BRIEF DESCRIPTION OF THE DRAWINGS- -.

Please insert the following subtitle before the first paragraph on the fourth page of the specification:

- -DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT- -.

Please delete page 8 in its entirety.

IN THE CLAIMS:

Please replace claims 1-7 with the following rewritten versions:

1. (Amended) Mixer for mixing at least two flows of gas or other Newtonian liquids, comprising:
  - a main flow channel through which a first flow of gas passes; and
  - an incorporated surface arranged in the main flow channel which affects the first flow, the incorporated surface having leading edges that are orientated against the first flow and around which the first flow can move freely, the leading edge having components that act in a main direction of flow of the gas as well as transversely thereto;
  - wherein the incorporated surface has a chamber into which a separate flow channel for a second flow of gas leads; said chamber being provided on a rear side of the incorporated

structure that faces away from an inflow of the first flow of gas with outlet openings into the first flow of gas.

2. (Amended) Mixer as defined in Claim 1, wherein an opening of the second flow of gas into the first flow of gas is located at a front half of the incorporated surface.

3. (Amended) Mixer as defined in Claim 1, wherein the chamber includes side walls arranged at an angle to the incorporated surface which stiffen said incorporated surface against bending loads.

4. (Amended) Mixer as defined in Claim 1 wherein the separate flow channel is routed to the incorporated surface on a front side thereof.

5. (Amended) Mixer as defined in Claim 1 wherein the incorporated surface is supported in the main flow channel by struts.

6. (Amended) Mixer as defined in Claim 1, further comprising a device to adjust an angle of the incorporated surface relative to the main direction of flow.

7. (Amended) Mixer as defined in Claim 1, wherein the outlet openings from separate chambers are arranged one behind the other.

Please add the following newly added claims:

8. (Newly Added) Mixer as defined in Claim 1, wherein the incorporated surface is a vortex-generating disc.

9. (Newly Added) Mixer as defined in Claim 5 wherein one of the struts is tubular and forms the separate flow channel.

IN THE ABSTRACT:

Please replace the abstract on page 11 with the following rewritten version:

ABSTRACT

A mixer for mixing at least two flows of gas or other Newtonian liquids is provided herein. The mixer includes a main flow channel through which a first flow of gas passes, with an incorporated surface that is arranged therein and which affects the flow. This incorporated surface has leading edges that are orientated against the flow and about which the flow can move freely; the leading edges include a component that acts in the direction of the main flow of the gas flow as well as a component that acts transversely thereto. In order to ensure that an additional gas or liquid component is mixed in rapidly, provision is made such that the incorporated structure surface has a chamber into which a separate flow channel for a second gas flow leads and the chamber has outlet openings into the first gas flow on a rear side of the incorporated surface that faces away from the first gas flow.

REMARKS

Applicants request entry of the present amendments which conform the claims to U.S. practice. No new matter is being introduced by this Amendment as antecedent support is set forth in the original specification and in the original claims.

Prosecution on the merits is respectfully requested.

The Examiner is invited to contact Applicants' Attorneys at the below-listed telephone number regarding this Preliminary Amendment or otherwise regarding the present application.

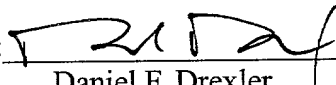
If there are any charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 06-1130 maintained by Applicants' attorneys.

Respectfully submitted,

HANS RUSCHEWEYH, ET AL.

CANTOR COLBURN LLP  
Applicants' Attorneys

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE:**

IN THE CLAIMS:

Claims 1-7 are amended herein as follows:

1. (Amended/Marked Up) Mixer for mixing at least two flows of gas or other Newtonian liquids, [with] comprising:

a main flow channel [(1)] through which [the] a first flow of gas passes[, which contains];  
and

an incorporated surface[s (7) that are] arranged [therein and] in the main flow channel which affects the first flow, the incorporated surface [(7) being a vortex-generating disc with] having leading edges [(8)] that are orientated against the first flow and around which the first flow can move freely, the [shape of this disc generating] leading edge having components that act in [the] a main direction of flow [(9)] of the gas [flow] as well as transversely thereto[, characterized in that];

wherein the incorporated surface [(7)] has a chamber [(13, 13a, 13b)] into which a separate flow channel [(5)] for a second flow of gas leads; [and in that the] said chamber [(13, 13a, 13b) is] being provided on [the] a rear side [(10)] of the incorporated structure [(7)] that faces away from [the] an inflow of the first flow of gas with outlet openings [(12)] into the first flow of gas.

2. (Amended/Marked Up) Mixer as defined in Claim 1, [characterized in that the] wherein an opening of the second flow of gas into the first flow of gas is located [in the region of the] at a front half of the incorporated surface [(7)].

3. (Amended/Marked Up) Mixer as defined in Claim 1, [characterized in that] wherein the chamber [(13, 13a, 13b) is provided with] includes side walls [that are] arranged at an angle to the incorporated surface [(7) and] which stiffen [the] said incorporated surface [(7)] against bending loads.

4. (Amended/Marked Up) Mixer as defined in [one of the] Claim[s] 1 [to 3, characterized in that] wherein the separate flow channel [(5)] is routed to the incorporated surface [(7)] on [the] a front side thereof.

5. (Amended/Marked Up) Mixer as defined in [one of the] Claim[s] 1 [to 4, characterized in that] wherein the incorporated surface [(7)] is supported in the main flow channel [(1)] by struts [(11), one of which is tubular and forms the separate flow channel (5)].

6. (Amended/Marked Up) Mixer as defined in [one of the preceding] Claim[s] 1, [characterized by] further comprising a device to adjust [the] an angle  $[(\alpha)]$  of the incorporated surface [(7)] relative to the main direction of flow [(9)].

7. (Amended/Marked Up) Mixer as defined in [one of the preceding] Claim[s] 1, [characterized in that] wherein the outlet openings [(12)] from [the] separate chambers [(13a, 13b)] are arranged one behind the other.

## IN THE ABSTRACT:

The Abstract has been amended as follows:

### ABSTRACT

[What is proposed is a] A mixer for mixing at least two flows of gas or other Newtonian liquids is provided herein. [What is provided is] The mixer includes a main flow channel [(1)] through which a first flow of gas passes, with an incorporated surface [(7)] that is arranged therein and which affects the flow. This incorporated surface [(7)] is a vortex-generating disc with] has leading edges [(8)] that are orientated against the flow and about which the flow can move freely; [its shape generates] the leading edges include a component that acts in the direction of the main flow [(9)] of the gas flow as well as a component that acts transversely thereto. In order to ensure that an additional gas or liquid component is mixed in rapidly, provision is made such that the incorporated structure surface [(7)] has a chamber [(13, 13a, 13b)] into which a separate flow channel [(5)] for a second gas flow leads[;] and [in that] the chamber [(13, 13a, 13b)] has outlet openings [(12)] into the first gas flow on [the] a rear side [(10)] of the incorporated surface [(7)] that faces away from the first gas flow.